

What is claimed is:

1. A method comprising the step of:
altering the expression of the *C. albicans PDE2* gene wherein said altered expression affects the virulence properties of *C. albicans*.
2. The method of claim 1, wherein said altered expression of *PDE2* gene comprises inhibiting expression of said *PDE2* gene.
3. The method of claim 2, wherein said inhibiting expression of *PDE2* gene results in one or more of the group consisting of enhanced activation of the cAMP-PKA signaling pathway, hyperactive germ tube formation, avirulence, attenuated avirulence, hyperproduction of *HWPI*, sensitivity to nutrient starvation, defective entry into stationary phase, and increased sensitivity to exogenous cAMP.
4. The method of claim 2, wherein said inhibiting expression of *PDE2* gene comprises interfering with *PDE2* gene transcription mediated by *cis* acting sequences.
5. The method of claim 4, wherein said *cis* acting sequences comprise *cis*-regulatory elements.
6. The method of claim 5, wherein said *cis*-regulatory elements comprise UAS.
7. The method of claim 5, wherein said *cis*-regulatory elements comprise URS.
8. The method of claim 5, wherein said *cis*-regulatory elements comprise a cAMP response element (CRE).
9. The method of claim 4, wherein said interfering with *PDE2* gene transcription comprises interfering with DNA binding proteins (BP) that bind to *PDE2 cis*-regulatory elements.
10. The method of claim 9, wherein said DNA BP comprise the CRE binding protein.

11. The method of claim 1, wherein said altering expression of *PDE2* gene comprises the overexpression of said *PDE2* gene.
12. The method of claim 11, wherein said *PDE2* gene overexpression results in one or more of the group consisting of defects in germ tube formation, inhibition of bud-hypha transitions, reduced filamentous growth, and a down-regulation of the cAMP-PKA signaling pathway.
13. The method of claim 1, wherein said virulence properties comprise adhesive properties.
14. The method of claim 13, wherein said adhesive properties comprise ability of *C. albicans* to adhere to one or more human tissues.
15. The method of claim 14, wherein said human tissues are one or more human tissues selected from the group consisting of vaginal, penile, oral, esophageal, gastrointestinal, and umbilical tissues.
16. The method of claim 1, wherein said virulence properties comprise invasive properties.
17. The method of claim 16, wherein said invasive properties comprise abilities of *C. albicans* to degrade extracellular matrix proteins.
18. The method of claim 16, wherein said invasive properties comprise abilities of *C. albicans* to block neutrophil oxygen radical production and degranulation.
19. The method of claim 1, wherein said virulence properties comprise proliferative properties.
20. The method of claim 1, wherein said *C. albicans* has infected a patient.
21. The method of claim 20, wherein said patient suffers from a disease.
22. The method of claim 21, wherein said disease is human immunodeficiency virus.

23. The method of claim 21, wherein said disease comprises complications associated with acquired immune deficiency syndrome.

24. The method of claim 21, wherein said disease comprises complications associated with an acquired immune deficiency syndrome related complex.

25. The method of claim 21, wherein said disease comprises one or more diseases selected from the group consisting of HIV, mucosal candidiasis, oral candidiasis, esophageal candidiasis, thrush, hematogenously disseminated candidiasis, and candida vaginitis.

26. The method of claim 20, wherein said patient is immunocompromised.

27. The method of claim 20, wherein said patient is an organ transplant recipient.

28. The method of claim 20, wherein said patient is undergoing a treatment regimen.

29. The method of claim 28, wherein said treatment regimen is chemotherapy.

30. The method of claim 28, wherein said treatment regimen is a drug regimen.

31. The method of claim 30, wherein said drug regimen suppresses the immune system.

32. The method of claim 30, wherein said drug regimen incorporates the use of one or more drugs that are selected from the group consisting of azathioprine, steroids, cyclosporine, antilymphocyte globulins, monoclonal anti-T cell antibodies, prednisone, methylprednisone, and cyclophosphamide.

33. A method comprising the step of:

altering the expression of one or more genes selected from the group consisting of the *C. albicans* *PDE2* gene and the *C. albicans* *CAP1* gene, wherein said altered expression interferes with the virulence properties of *C. albicans*.

34. A microarray comprising at least one nucleotide sequence or fragment thereof, of the *C. albicans PDE2* gene alone or with the *C. albicans CAP1* gene.
35. A method comprising the step of:
modifying the expression of the *C. albicans PDE2* gene alone or with the *C. albicans CAP1* gene, wherein said modified gene expression alters cAMP levels in *C. albicans*.
36. The method of claim 35, wherein said altered cAMP levels interfere with the morphogenic transitions of *C. albicans*.
37. The method of claim 35, wherein said altered cAMP levels interfere with the virulence properties of *C. albicans*.
38. The method of claim 35, wherein said altered cAMP levels comprise an increase in intracellular cAMP levels.
39. The method of claim 35, wherein said altered cAMP levels comprise a decrease in intracellular cAMP levels.
40. The method of claim 35, wherein said modified expression gene comprises inhibiting gene expression.
41. The method of claim 35, wherein said modified expression gene comprises inducing gene expression.
42. The method of claim 35, wherein said modified gene expression comprises inhibiting *PDE2* gene expression alone or with inhibiting *CAP1* gene expression.
43. The method of claim 35, wherein said modified gene expression comprises inhibiting *PDE2* gene expression and inducing *CAP1* gene expression.
44. The method of claim 35, wherein said modified gene expression comprises inducing *PDE2* gene expression alone or with inducing *CAP1* gene expression.

45. The method of claim 35, wherein said modified gene expression comprises inducing *PDE2* gene expression alone or with inhibiting *CAP1* gene expression.